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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Franz Laermer

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EXAMINER

HO, HOANG QUAN TRAN

ART UNIT

PAPER NUMBER

2818

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/524,610	Applicant(s) LAERMER ET AL.	
	Examiner Hoang-Quan T. Ho	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/5/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Appeal

In view of the appeal brief filed on August 21, 2008, PROSECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on September 5, 2008 is being considered by the examiner.

Response to Arguments/Remarks

Applicant's response filed on August 21, 2008 is acknowledged and is answered as follows.

Applicant's arguments, see pgs. 3 – 5, with respect to the rejections have been fully considered and are partially persuasive. Therefore, the rejections have been rendered moot. However, upon further consideration, new grounds of rejections are made below in view of new discovered prior art.

Specification

The use of the trademark Teflon® has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

See U.S. Pat. App. Pub. No. 2006/0108576 A1, which is the publication of the instant application's specification. For example, but not limited to, see at ¶2 – 4, 8 – 9, 13 – 14, 17, 19, etc...

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16 – 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation "an etching layer, whereby the etching layer is a silicon layer" (emphasis added) in line 2. The examiner suggests applicant to reword the claimed etching layer. In other words, "etching" should be replaced with "etched" to indicate that the layer has been etched. Applicant should maintain consistent structural claim limitations according to the language of claim 16 and the disclosed invention.

Claims 17 – 28 depend from claim 16.

Regarding claim 20, the phrase "including" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 16 – 18 and 20 – 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamamoto (U.S. Pat. App. Pub. No. 2002/0158339 A1).

Regarding claim 16, figs. 5A – 5C of Yamamoto discloses a layer system, comprising:

an etching layer (ref. 12; as seen in fig. 5A; ¶121 and 145), whereby the etching layer is a silicon layer (¶116); and

a passivation layer applied at least regionally to a surface of the silicon layer (as seen in fig. 5C), wherein:

the passivation layer includes a first, at least largely, inorganic partial layer (ref. 26; ¶147) and a second partial layer (ref. 28), and

the second partial layer is made of an organic compound (¶13 – 14 and 148).

Regarding claim 17, Yamamoto discloses the layer system as recited in Claim 16, wherein the organic compound contains a halogen (¶163).

Regarding claim 18, Yamamoto discloses the layer system as recited in Claim 16, wherein:

the organic compound includes a silane corresponding to one of an organic fluorine silane, an organic fluorochlorine silane, and a siloxane (¶13 – 14 and 148).

Regarding claim 20, Yamamoto discloses the layer system as recited in Claim 16, wherein the first partial layer is at least largely composed of an oxide layer including a silicon oxide (¶116).

Regarding claim 21, Yamamoto discloses the layer system as recited in Claim 16, wherein the first partial layer has a thickness of 1 nm to 100 nm (¶157).

Regarding claim 22, Yamamoto discloses the layer system as recited in Claim 16, wherein the first partial layer has a thickness of 1 nm to 20 nm (¶157).

Regarding claim 23, Yamamoto discloses the layer system as recited in Claim 16, wherein the first partial layer is directly applied one of (a) to the silicon layer (ref. 12) and (b) on a layer of silicon oxide situated on the silicon layer (as seen in fig. 5C).

Regarding claim 24, Yamamoto discloses the layer system as recited in one Claim 16, wherein the second partial layer is a self-assembled monolayer (¶13 – 14 and 148).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto.

Regarding claim 25, Yamamoto discloses the layer system as recited in Claim 16, but Yamamoto may not disclose wherein the second partial layer has a thickness of 0.5 nm to 30 nm. However, ¶152 of Yamamoto discloses that a sufficient thickness may be provided for the second partial layer (ref. 28). Therefore, one of ordinary skill in the art may be capable of providing a thickness of 0.5 nm to 30 nm.

Regarding claim 26, Yamamoto discloses the layer system as recited in Claim 16, but Yamamoto may not disclose wherein the second partial layer has a thickness of 5 nm to 20 nm. However, ¶152 of Yamamoto discloses that a sufficient thickness may be provided for the second partial layer (ref. 28). Therefore, one of ordinary skill in the art may be capable of providing a thickness of 5 nm to 30 nm.

Regarding claim 27, Yamamoto discloses the layer system as recited in Claim 16, but Yamamoto may not disclose wherein the passivation layer protects the silicon layer with respect to an etch attack by a gaseous halogen fluoride including one of ClF_3 and BrF_3 . However, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In essence, apparatus claims cover what a device is, not what a device does. See MPEP § 2112.01 and § 2114.

Regarding claim 28, Yamamoto discloses the layer system as recited in Claim 16, but Yamamoto may not disclose wherein the passivation layer is free of micro-scale or nano-scale channels which are permeable for a gas including one of ClF_3 , BrF_3 and a vapor. However, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to

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patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In essence, apparatus claims cover what a device is, not what a device does. See MPEP § 2112.01 and § 2114.

Allowable Subject Matter

Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is an examiner's statement of reasons for the indication of allowable subject matter: The cited art, whether taken singularly or in combination, especially when all limitations are considered within the claimed specific combination, fails to teach or render obvious wherein the organic compound has the general formula $R_a-R_b-Si(X)_{3-n}(R_c)_n$, R_a being a perfluorinated polyether or a perfluorinated alkyl group having 1 to 16 carbon atoms, especially 6 to 12 carbon atoms, R_b and R_c being an alkyl group, and X being a halogen, an acetoxy group or an alkoxyl group, and n having a value of 0 to 2.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoang-Quan T. Ho whose telephone number is 571-272-8711. The examiner can normally be reached on Monday - Friday, 9 AM - 5 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoang-Quan T Ho/
Examiner, Art Unit 2818
January 12, 2009

/Steven Loke/
Supervisory Patent Examiner, Art Unit 2818